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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,493	12/30/2003	Steve Larsen	S63.2-10827-US01	8743

490 7590 03/01/2006

VIDAS, ARRETT & STEINKRAUS, P.A.  
6109 BLUE CIRCLE DRIVE  
SUITE 2000  
MINNETONKA, MN 55343-9185

EXAMINER

ALEXANDER, MICHAEL P

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/748,493	<b>Applicant(s)</b> LARSEN ET AL.	
	<b>Examiner</b> Michael P. Alexander	<b>Art Unit</b> 1742	

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 December 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 59 and 61-74 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 59 and 61-74 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claim(s) 59 and 61-74 is/are pending.

#### ***Election/Restrictions***

Claims 1-58 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 15 December 2005.

#### ***Claim Objections***

Claim 71 is objected to because of the following informalities: iron is listed twice in the Markush group. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 64-65 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 64, the specification does not provide support for the chelating agent being thiocarboxylic salts.

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Regarding claim 65, the specification does not provide support for the thioruronium salts having the specified formula.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 59, 63-71 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pacetti et al. (US 6,355,058) in view of Stinson (US 2005/0089438 A1) and Kuzushima (JP408302500A).

Regarding claim 59, Pacetti teaches (col. 4 lines 9-27, col. 6 lines 48-67) a method of electropolishing a stent formed from platinum alloy, the method comprising the steps of: providing a tubular member; laser cutting a stent pattern in said tubular member to form a stent; and electropolishing said stent in an acidic mixture. Pacetti does not specify the composition of the platinum alloy, does not specify electropolishing in an aqueous acidic mixture comprising at least one chelating or complexing agent

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having at least on sulfur atom and does not specify applying a multiple pulse waveform to the acidic mixture.

With respect to the composition of the platinum alloy in claim 59, Stinson teaches (0001-0005) a platinum alloy comprising at least one noble metal and at least one non-noble metal and teaches that the alloy is suitable for use in medical instruments, such as stints, because the alloy has high hardness, strength, corrosion resistance and biocompatibility. It would have been obvious to one of ordinary skill in the art to combine the stent forming method of Pacetti with the platinum alloy composition of Stinson because Stinson teaches that the alloy is suitable for use in medical instruments because the alloy has high hardness, strength, corrosion resistance and biocompatibility as taught by Stinson.

With respect to the steps of electropolishing in an aqueous acidic mixture comprising at least one chelating or complexing agent having at least on sulfur atom and applying a reverse multiple pulse waveform to the acidic mixture in claim 59, Kuzushima teaches (abstract) a method of electropolishing platinum alloys using an aqueous electropolishing solution comprising thiourea and employing a pulse reverse waveform and teaches that the method achieves excellent glossiness without the use of poisonous cyanide. It would have been obvious to one of ordinary skill in the art to combine the stent forming method of Pacetti with the electropolishing method of Kuzushima in order to achieve excellent glossiness without the use of poisonous cyanide as taught by Kuzushima.

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Regarding claim 63, Kuzushima teaches the use of reverse multiple pulse waveform.

Regarding claim 64, Kuzushima teaches use of thiourea.

Regarding claims 65-66, Kuzushima teaches the use of N-methylthiourea.

Regarding claims 67-71 and 74, Stinson teaches (0005) that the stent is formed from an alloy comprising platinum and chromium.

Claims 59, 63-64 and 67-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leong (US 2002/0198589A1) in view of Faust (US 2,334,698) and Bereza et al. (SU 144636 A1).

Regarding claim 59, Leong teaches (0011, 0034, 0046, 0061) a method of electropolishing a stent formed from an alloy comprising platinum-modified stainless steel, the method comprising the steps of: providing a tubular member; laser cutting a stent pattern in said tubular member to form a stent; and electropolishing said stent in an aqueous acidic mixture. Leong does not specify that the mixture would contain at least one chelating or complexing agent having at least one sulfur atom and does not specify subjecting the mixture to a multiple pulse waveform.

With respect to the limitation that the mixture would contain at least one chelating or complexing agent having at least one sulfur atom in claim 59, Faust teaches (col. 1 lines 1-5, col. 3 lines 17-32) in a method of polishing stainless steel using thiourea as a complexing agent in order to produce lustrous surfaces after electropolishing. It would have been obvious to one of ordinary skill in the art to modify the method of Leong by

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adding thiourea as a complexing agent in order to produce a lustrous surface after electropolishing as taught by Faust.

With respect to the limitation of subjecting the mixture to a multiple pulse waveform in claim 59, Bereza teaches (pages 1-2 of the English translation) that during the course of anodic current passivation occurs concurrently with the dissolution of the metal. Bereza teaches depassivating the surface by applying cathodic pulses in between anodic pulses, which results in a reduction of the roughness of the surface. It would have been obvious to one of ordinary skill in the art to modify the method of Leong by applying cathodic pulses in between anodic pulses during the electropolishing of the stent in order to avoid passivation of the surface and reduce the roughness of the surface during electropolishing as taught by Bereza.

Regarding claim 63, the cathodic and anodic pulses of Bereza would be a periodic reverse multiple pulse waveform.

Regarding claim 64, Faust teaches (col. 3 lines 17-32) providing thiourea as the complexing agent.

Regarding claims 67-74, Leong teaches that the stent would be formed of platinum enriched stainless steel alloy.

Claim 61 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pacetti et al. in view of Stinson and Kuzushima or over Leong in view of Faust and Bereza as applied to claim 59 above, and further in view of Kelly (US 4,148,670).

Regarding claim 61, the combination of references do not specify the step of soaking the stent in an acidic mixture of fluoroboric and nitric acids. However, Kelly

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teaches (col. 11 lines 60-70) soaking a metal surface in an acidic mixture of fluoroboric acid and nitric acid in order to coat the surface. It would have been obvious to one of ordinary skill in the art to modify the aforementioned combination of references by subsequently soaking the stent in an acidic mixture of fluoroboric acid and nitric acid in order to coat the surface of the stent as taught by Kelly.

Claim 62 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leong in view of Faust and Bereza as applied to claim 59 above, and further in view of Bogorad et al. (SU 802412 B).

Regarding claim 62, the combination of references do not specify the step of etching the stent in an electrolytic acid bath comprising at least one chelating or complexing agent having at least one sulfur ion before said electropolishing step. However, Bogorad teaches (abstract) cleaning steels electrochemically using thiourea in order to remove all scale and rust. It would have been obvious to one of ordinary skill in the art to modify the method of the aforementioned combination of references by cleaning the steel stent electrochemically using thiourea in order to remove all scale and rust as taught by Bogorad.

### ***Response to Arguments***

Applicant's arguments with respect to claims 59 and 61-74 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Alexander whose telephone number is 571-272-8558. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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